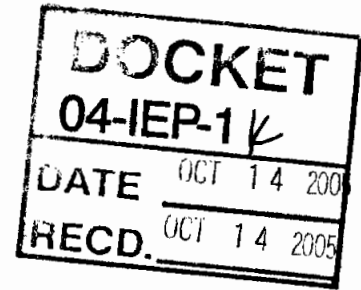


DOCK WATTS LLC

306 Vista del Mar, Suite B
Redondo Beach, CA 90277

Phone: (310) 373-8222
Fax: (310) 373-8240
Email: energydynamix@att.net



October 14, 2005

Commissioner John L. Geesman
Commissioner James D. Boyd
California Energy Commission
1516 Ninth Street, MS-4
Sacramento CA 95814-5512

**Re: Comments on Transportation Fuels, Marine Vessel and Port Emissions
(CEC Docket No 04-IEP 1K Committee Draft Document Hearings)**

Dear Commissioners:

Dock Watts LLC (Dock Watts) appreciates the opportunity to submit comments to the California Energy Commission (CEC) regarding the 2005 Integrated Energy Policy Report (2005 IEPR). Our comments relate to the Transportation Fuels element of the 2005 IEPR (Chapter 2), specifically focused on marine vessel emissions and opportunities to displace fuel oil use with clean electric energy for ships calling on California Ports. Dock Watts is a California based company specializing in the development of shore power.

BACKGROUND

Shore Power (aka "cold ironing") is a means of providing ships with electric power from the local grid, allowing ships to shut down their on-board auxiliary engine generators while in port. In addition to significant emissions reduction in port communities, shore power allows ocean going vessels to reduce consumption of fuel oil while in port. Air emissions from port operations are a significant source of NO_x and Particulate Matter (PM) emissions. Recent reports suggest that port and marine vessel emissions account for 25 percent of all NO_x and PM emissions in the Los Angeles Basin. Of this, approximately 20 percent of port related air emissions are attributed to ship on-board auxiliary engines operating to provide electric power for ships while in port (referred to as "hotelling" load).

EMISSIONS REDUCTION

Emissions characteristics for ship auxiliary engines compared to grid supplied power from state-of-the-art combined cycle power generation are summarized on a lb/MWh basis as follows ^{1,2}:

<u>lb/MWh</u>	PM	NO _x	SO _x	HC	CO	CO ₂
Heavy Fuel Oil	3.31	32.41	27.12	0.88	2.43	1,591.7
Marine Diesel	0.66	30.64	4.63	0.88	2.43	1,521.2
Natural Gas Combined Cycle	0.046	0.046	0.008	0.054	0.115	515.7

The result from shore power is a 99.8% reduction in NO_x emissions and a 92.5% to 98.6% reduction in PM emissions compared to ship-on board power generation using Marine Diesel and Heavy Fuel Oil respectively. These emissions reduction directly benefit local port communities.

1. Emission Factors for Marine Auxiliary Engines are from the California Air Resources Board
2. Emission Factors for natural gas combined cycle are based on a 525 MW GE 2x1 F with 80 % effective SCR

DOCK WATTS LLC

POWER AND FUEL CONSIDERATIONS

According to the August 24, 2005 California Air Resources Board's "Statewide Marine Auxiliary Engine Emissions Inventory", ship auxiliary engines in California operating to provide for ship hotelling load while in port produced 19.8 tons/day NOx emissions and 1.7 tons/day PM emissions in 2004. Based on the above lb/MWh emissions factors, the aggregate California power requirements associated with ship hotelling is estimated to be in the range of 1,200 MWh per day (438 GWh per year). At an assumed fuel rate of 70 gallons per MWh (0.22 Mton/MWh), ship auxiliary engines represent over 30 million gallons of fuel oil consumption per year that could be displaced with clean electric energy derived from natural gas fueled power generation.

SHORE POWER IS AN AIR QUALITY OPTION

Growth in Pacific trade is expected to increase California port activity and the need to manage associated air quality. Shore power provides an integrated solution that improves air quality near port communities and displaces fuel oil consumption with clean electric energy. To accommodate shore power, ships require specialized electric equipment and ship on-board modifications at significant expense. Ships with significant hotelling loads that frequently call on a port (frequent visitors) are preferred candidates for shore power. Shore power may not be the best solution for all ships calling on California ports, especially ships that rarely call on California ports (ie: infrequent visitors). As such, a comprehensive mandate for shore power may not be justified.

RECOMMENDATIONS

To achieve marine auxiliary engine emissions reductions, ships should be presented with a range of options, including shore power, as an alternative control measure. Eventually, shore power may become the norm for all ports and ships on the west coast and around the world. As more ports and ships adopt shore power, cost and associated economics are expected to become more acceptable. Early implementation of shore power will require well structured incentives, market solutions, and funding support, for ports, terminal operators and ships. Dock Watts encourages the CEC and other agencies to recognize the beneficial attributes of shore power and support development of this emission mitigation solution.

Sincerely,

Robert D. Hoffman

President
Dock Watts LLC

cc: California Energy Commission Dockets Unit, Docket No. 04-IEP 1K